

Fig. 1

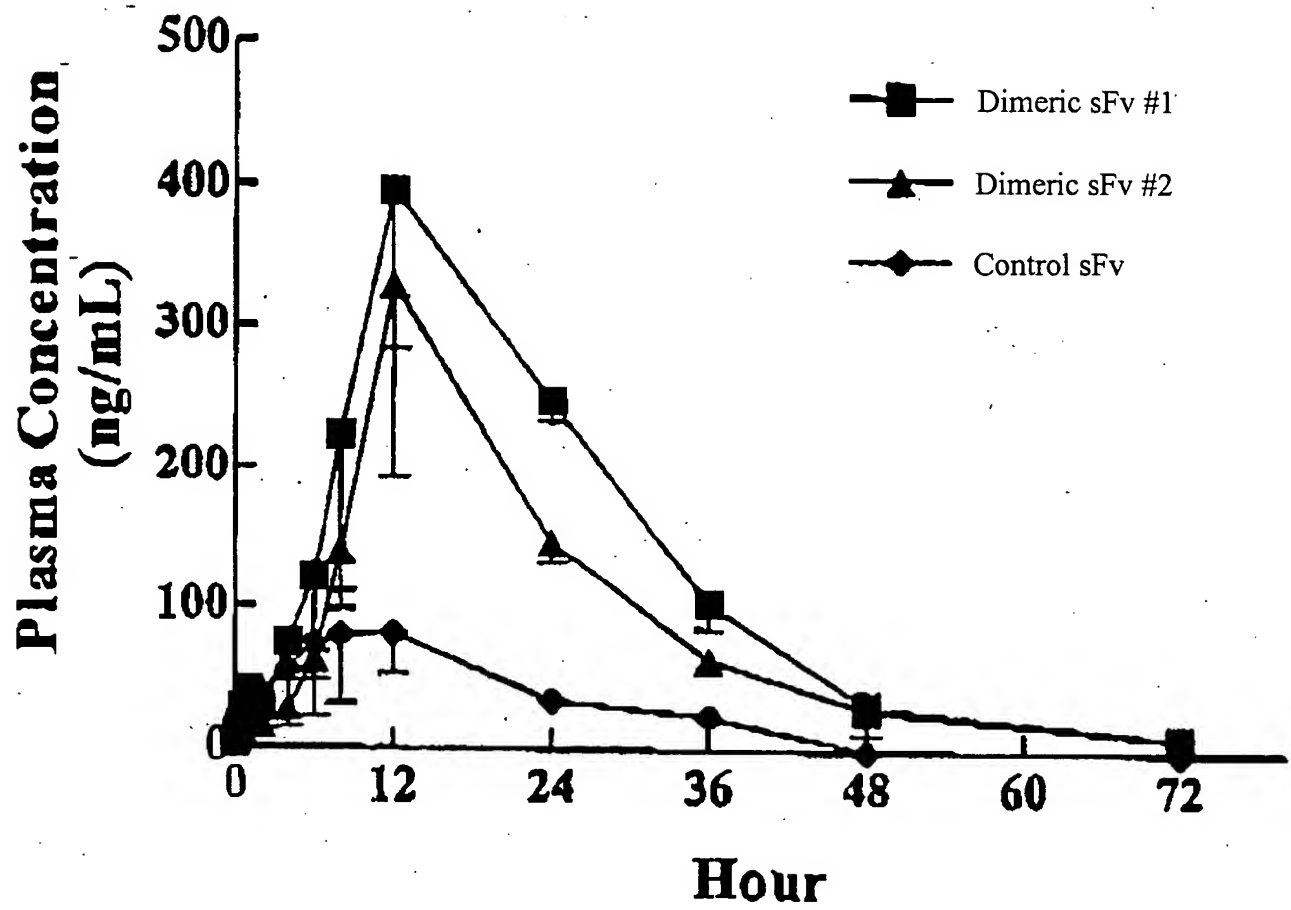


Fig. 2

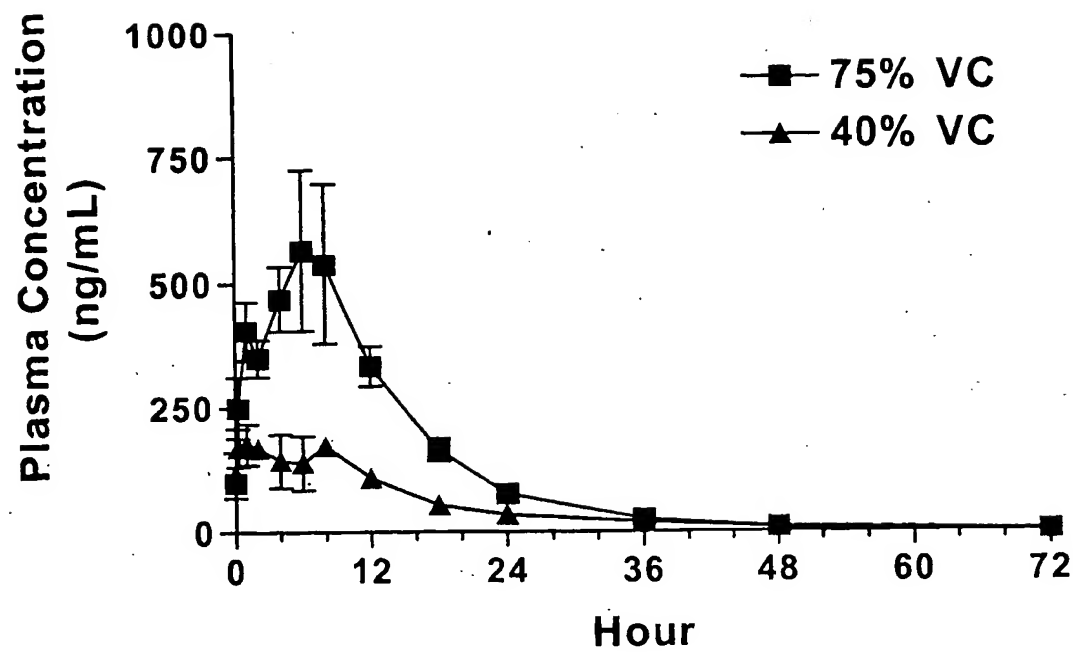


Fig. 3

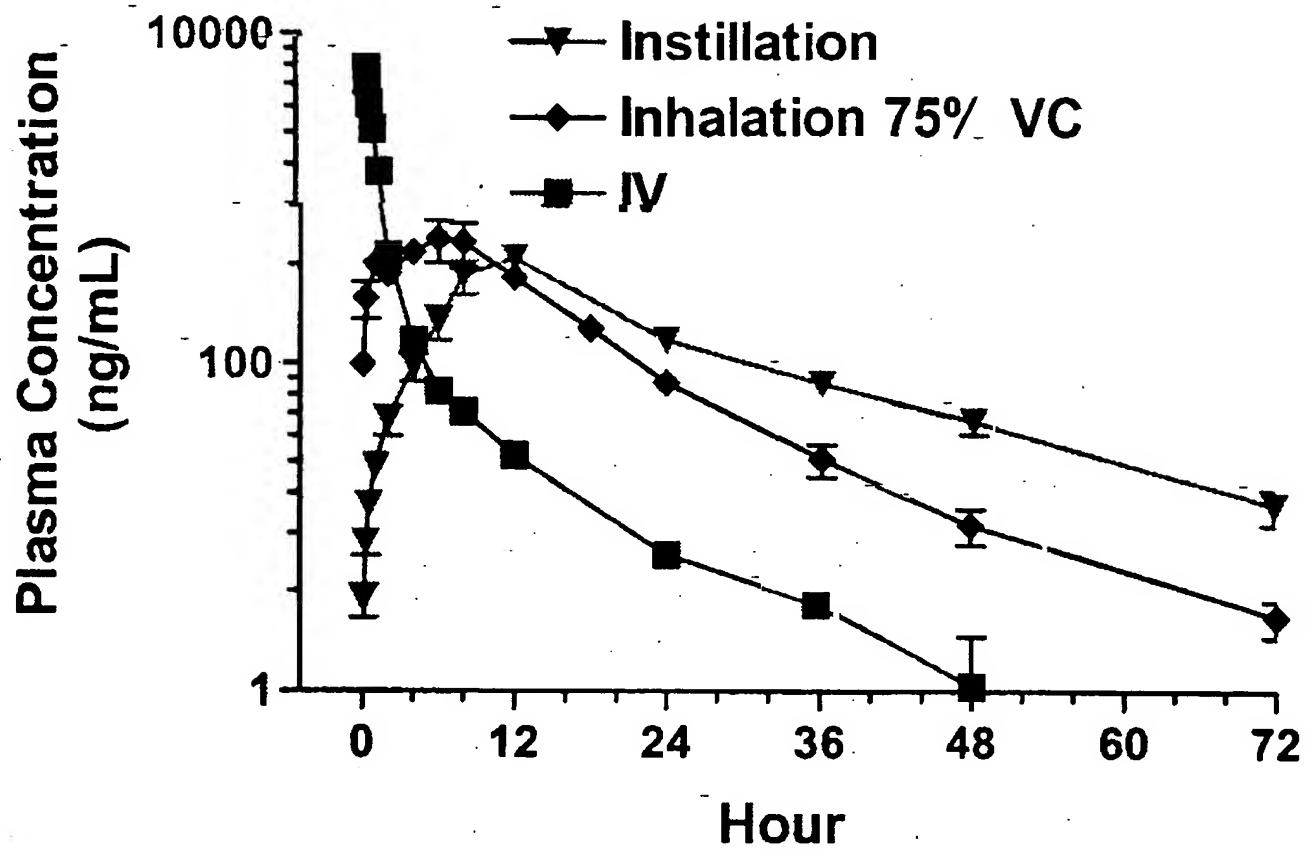


Fig. 4

pelB Leader

71

ATGA AATACCTATT GCCTACGGCA GCCGCTGGAT  
TACT TTATGGATAA CGGATGCCGT CGGCGACCTA

pelB Leader

5A Heavy Chain

SfiI

NcoI

PstI

141 TGTTATTACT CGCGGCCAG CCGGCCATGG CCCAGGTACA GCTGCAGCAA TCAGGGGGAG GCGTGGTCCA  
ACAATAATGA GCGCCGGGTC GGCCGGTACC GGTCCATGT CGACGTCGTT AGTCCCCCTC CGCACCCAGGT

5A Heavy Chain

211 GCCTGGGAGG TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATGC TATGCACTGG  
CGGACCCCTCC AGGACTCTG AGAGGACACG TCGGAGACCT AAGTGAAGT CATCGATACG ATACGTGACC

5A Heavy Chain

BsaI

281 GTCCGCCAGG CTCCAGGGAA GGGCTGGAG TGGTCTCAG CTATTAGTGG TAGTGGTGGT AGCACATACT  
CAGCGGTCC GAGGTCCCTT CCCCAGCCTC ACCCAGAGTC GATAATCACC ATCACCACCA TCGTGTATGA

5A Heavy Chain

351 ACGCAGACTC CGTGAAGGC CGGTTACCA TCTCCAGAGA CAACGCCAAG AACTCACTGT ATCTGCAAAT  
TGGTCTGAG GCACTTCCC GCCAAGTGGT AGAGGTCTCT GTTGGCGGTC TTGAGTGACA TAGACGTTTA

Fig. 5A

5A Heavy Chain		5A Light Chain	
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421	GAACAGCCTG AGAGCCGAGG ACACGGCTGT GTATTACTGT GCGAGAGATA CCCGAGGGTA CTTGATCTC CTTGTCGGAC TCTCGGCTCC TGTGCCGACA CATAATGACA CGCTCTCTAT GGGCTCCCAT GAAGCTAGAG	5A Heavy Chain	5A Light Chain
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491	TGGGGCCGTG GCACCCCTGGT CACCGTCTCC TCAGGTGGCG GAGGGTCATC TGAGCTGACT CAGGACCCCTG ACCCCGGCAC CGTGGGACCA GTGGCAGAGG AGTCCACCGC CTCCAGTAG ACTCGACTGA GTCCTGGGAC	Linker	
-----		-----	
561	CTATGTCTGT GGCCTTGGA CAGACAGTCA GAATCACATG TCAAGGGGAC AGTCTCAGAA AGTATCATGC GATACAGACA CCGGAACCCCT GTCTGTCACT CTTAGTGTAC AGTTCCCTTG TCAGAGTCTT TCATAGTACG	5A Light Chain	
-----		-----	
631	AGCTGGTAT CAGCAGAAGC CAGGGCAGGC CCCTGTTCTT GTCATCTATG GTAAGAATGA ACGTCCCTCA TTCGACCATA GTCGTCTTCG GTCCCGTCCG GGGACAAGAA CAGTAGATAC CATTCTTACT TGCAGGGGAGT	5A Light Chain	
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BamHI			
~~~~~			
701	GGGATCCCAG AGCGATTCTC TGGGTECCACC TCAGGAGACA CAGCTTCCTT GACCATCAGT GGGTCCAGG CCCTAGGGTC TCGCTAAGAG ACCCAGGTGG AGTCCTCTGT GTCGAAGGAA CTGGTAGTCA CCCGAGGTCC		
-----		-----	
771	CGGAAGATGA GGCTGACTAT TACTGTCACT CCCGAGACTC TAATGCTGAT CTTGTGTTGT TCGGCGGAGG GCCTTCTACT CCGACTGATA ATGACAGTGA GGGCTCTGAG ATTACGACTA GAACACCACA AGCCGCCTCC	5A Light Chain	

Fig. 5B

5A Light Chain

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BlnI  
~~~~~  
HindII  
~~~~~  
Sali  
~~~~~  
HincII  
~~~~~

AvrII

~~~~~

841 GACCAAGGTC ACCGTCCTAG GTTAATAAGT CGACCTCGAC  
CTGGTTCCAG TGGCAGGATC CAATTATTCA GCTGGAGCTG

Fig. 5C

pelB Leader  
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 ATGAA ATACCTATTG CCTACGGCAG CCGCTGGATT  
 TACTT TATGGATAAC GGATGCCGTC GCGGACCTAA

5A Heavy Chain

pelB Leader

SfiI

PstI

NcoI

71 GTTATTACTC GCGGCCCAGC CCGCCATGGC CCAGGTACAG CTGCAGCAAT CAGGGGGAGG CGTGGTCCAG  
 CAATAATGAG CGCCGGGTCTG GCCGGTACCG GGTCCATGTC GACGTCGTTA GTCCCCCTCC GCACCAGGTC

5A Heavy Chain

BsgI

141 CCTGGGAGGT CCCTGAGACT CTCCTGTGCA GCCTCTGGAT TCACCTTCAG TAGCTATGCT ATGCACTGGG  
 GGACCCCTCCA GGGACTCTGA GAGGACACGT CGGAGACCCTA AGTGGAAAGTC ATCGATACGA TACGTGACCC

5A Heavy Chain

211 TCCGCCAGGC TCCAGGGAAG GGGCTGGAGT GGGTCTCAGC TATTAGTGGT AGTGGTGGTA GCACATACTA  
 AGGCGGTCCG AGGTCCCTTC CCCGACCTCA CCCAGAGTCG ATAATCACCA TCACCACCAT CGTGTATGAT

5A Heavy Chain

281 GCAGACTCC GTGAAGGCC GGTTCACCAT CTCAGAGAGC AACGCCAAGA ACTCACTGTA TCTGCAAAATG  
 GCGTCTGAGG CACTTCCCGG CCAAGTGGA GAGGTCTCTG TTGCGGTTCT TGAGTGACAT AGACGTTTAC

Fig. 6A



|     | 5A Heavy Chain  | Linker | 5A Light Chain |
|-----|---|--------|----------------|
| 351 | AACAGCCTGA GAGCCGAGGA CACGGCTGTG TATTACTGTG CGAGAGATAC CCGAGGGTAC TTCGATCTCT<br>TTGTCGGACT CTCGGCTCCT GTGCCGACAC ATAATGACAC GCTCTCTATG GGCTCCCATG AAGCTAGAGA  |        |                |
| 421 | GGGGCCGTGG CACCCTGGTC ACCGTCTCCT CAGGTGGCGG AGGTCATCT GAGTGAATC AGGACCCCTGC<br>CCCCGGCACC GTGGGACCAG TGGCAGAGGA GTCCACCGCC TCCCAGTAGA CTCGACTGAG TCCTGGGACG   |        |                |
| 491 | TATGTCTGTG GCCTTGGGAC AGACAGTCAG AATCACATGT CAAGGGGACA GTCTCAGAAA GTATCATGCA<br>ATACAGACAC CGGAACCCCTG TCTGTCAATC TTAGTGTA GTTCCCCCTGT CAGAGTCTTT CATAGTACGT  |        |                |
| 561 | AGCTGGTATC AGCAGAAGCC AGGGCAGGCC CCTGTTCTTG TCATCTATGG TAAGAATGAA CGTCCCCTCAG<br>TCGACCATAG TCGTCTTCGG TCCCGTCCGG GGACAAGAAC AGTAGATACC ATTCTTACTT GCAGGGAGTC |        |                |
| 631 | GGATCCCAGA GCGATTCTCT GGGTCCACCT CAGGAGACAC AGCTTCCTTG ACCATCAGTG GGCTCCAGGC<br>CCTAGGGTCT CGCTAAGAGA CCCAGGTGGA GTCCTCTGTG TCGAAGGAAC TGGTAGTCAC CCGAGGTCCG  |        |                |

BamHI

Fig. 6B

# 5A Light Chain

701 GGAAGATGAG GCTGACTATT ACTGTCACTC CCGAGACTCT AATGCTGATC TTGTGGTGTGTT CGGCGGAGGG  
CCTTCTACTC CGACTGATAA TGACAGTGAG GGCTCTGAGA TTACGACTAG AACACCACAA GCCGCCTCCC

5A Light Chain (G3S)2 Linker IL2 Coding Region

BlnI  
~~~~~  
AvrII  
~~~~~

771 ACCAAGTCA CCGTCCTAGG TGGCGGCGGA AGCGGCGGAG GCTCCGCACC TACTTCAAGT TCTACAAAGA  
TGGTTCCAGT GGCAGGATCC ACCGCCGCCT TCGCCGCCTC CGAGGCGTGG ATGAAAGTTCA AGATGTTTCT

IL2 Coding Region

841 AAACACAGCT ACAACTGGAG CATTACTTC TGGATTACA GATGATTTTG AATGGAATTA ATAAATTACAA  
TTTGTGTGCA TGTGACCTC GTAAATGAAG ACCTAAATGT CFACTAAAC TTACCTTAAT TATTAATGTT

IL2 Coding Region

911 GAATCCCAA CTCACCAGGA TGCTCACATT TAAGTTTAC ATGCCCAAGA AGGCCACAGA ACTGAAACAT  
CTTAGGGTTT GAGTGGTCCT ACGAGTGTA ATTCAAAATG TACGGGTTCT TCCGGTGTCT TGACTTTGTA

IL2 Coding Region

981 CTTCAGTGC TAGAAGAAGA ACTCAAACCT CTGGAGGAAG TGCTAAATTT AGCTCAAAGC AAAAACCTTC  
GAAGTCACAG ATCTTCTTCT TGAGTTTGA GACCTCCTTC ACGATTAAA TCGAGTTTCG TTTTGTGAAAG

XbaI  
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Fig. 6C

IL2 Coding Region

BfrI

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AflII

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1051 ACTTAAGACC CAGGGACTTA ATCAGCAATA TCAACGTAAT AGTTCTGGAA CTAAAGGGAT CTGAAACAAC  
TGAATTCTGG GTCCCTGAAT TAGTCGTTAT AGTTGCATTA TCAAGACCTT GATTTCCTTA GACTTTGTTG

IL2 Coding Region

1121 ATTCATGTGT GAATATGCTG ATGAGACAGC AACCATTTGA GAATTTCTGA ACAGATGGAT TACCTTTTGT  
TAAGTACACA CTTATACGAC TACTCTGTCTG TTGGTAACAT CTTAAAGACT TGTCTACCTA ATGGAACAACA

IL2 Coding Region

EcoRI

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XhoI

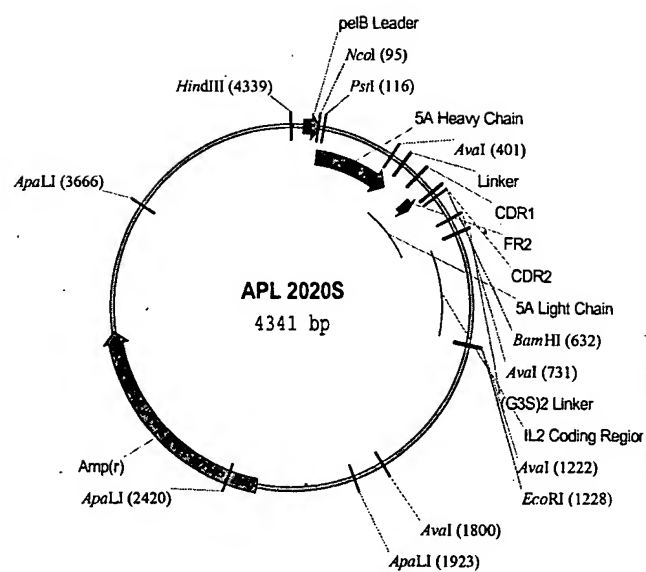
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PaeR7I

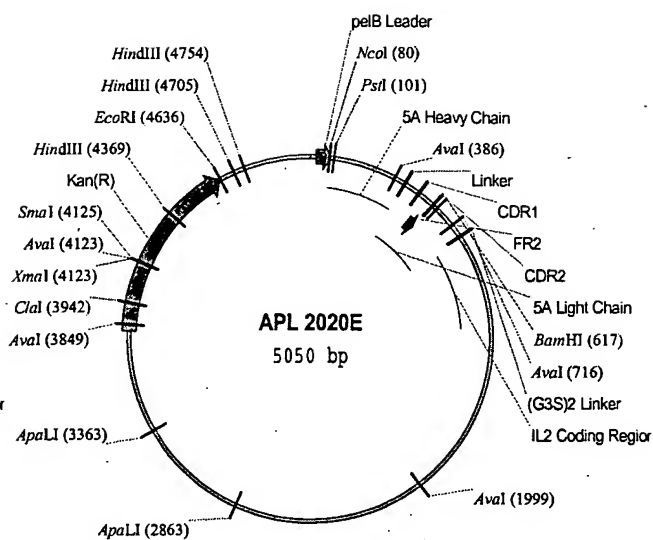
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1191 CAAAGCATCA TCTCAACACT AACTTAATAA CTCGAGGAAT TC  
GTTTCGTAAGT AGAGTTGTGA TTGAATTATT GAGCTCCTTA AG

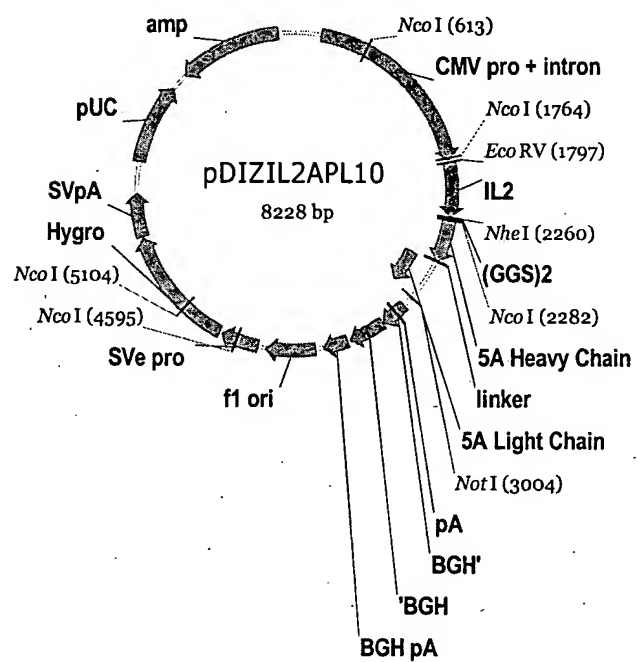
Fig. 6D



pSyn sFv-IL-2 Fusion Construct

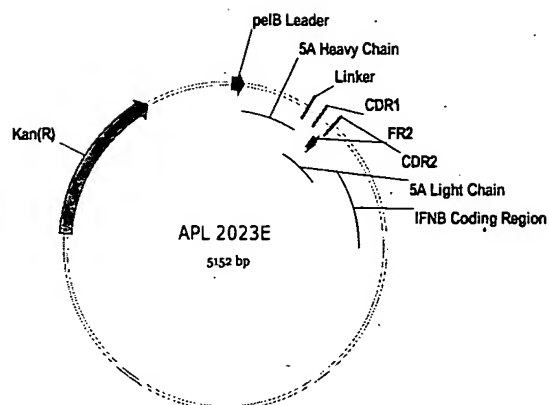


pELK sFv-IL-2 Fusion Construct

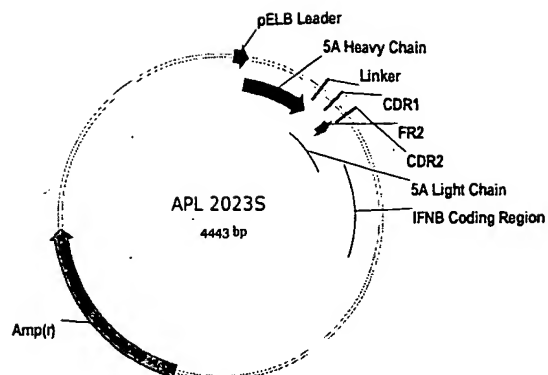


pDIZ sFv-IL-2 Fusion Construct

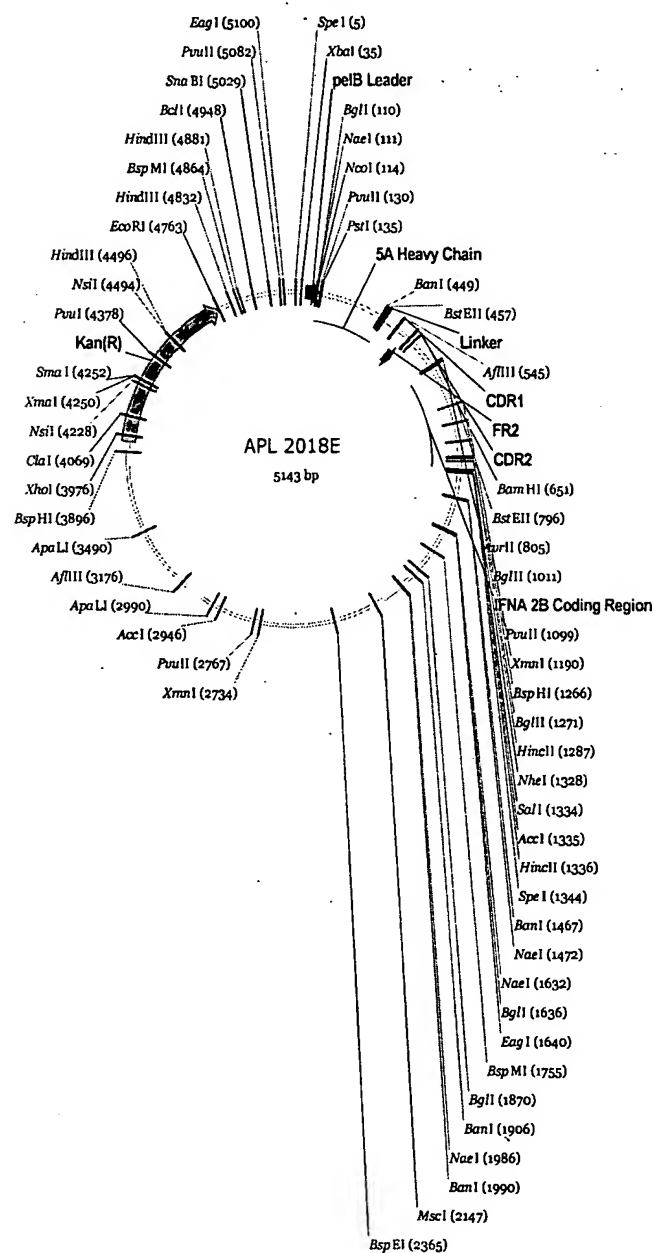
Fig. 7



pELK sFv-β-IFN Fusion Construct



pSyn sFv-β-IFN Fusion Construct



pELK sFv-α-IFN Fusion Construct

Fig. 8